USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY		
Nebraska Science Standards– Grades 9 - 12		
Lesson	**Standard**	**Example Indicator**
2	**12.1.2.a**	Create a physical, mental, or mathematical model to show how objects and processes are connected.
2	**12.1.2.b**	Test the usefulness of a model by comparing its predictions to actual observations.
2, 3	**12.1.2.c**	Understand that the way data are displayed affects interpretation.
2, 3	**12.1.2.d**	Evaluate the reasonableness of answers to problems.
3	**12.1.2.f**	Understand that a correlation between two variables doesn't mean that either once causes the other.
1	**12.1.3.a**	Use powers of ten to represent large and small numbers.
1, 2, 3	**12.1.3.c**	Understand that measurement errors may affect results of calculations.
1, 2	**12.1.3.e**	Investigate and describe how different characteristics, properties, or relationships within a system change as their dimensions increase or decrease.
2, 3	**12.2.1.a**	Formulate questions and identify concepts that guide scientific investigations.
2, 3	**12.2.1.b**	Design and conduct scientific investigations.
1, 2, 3	**12.2.1.c**	Use technology and mathematics to improve investigations and communications.
1, 2, 3	**12.2.1.d**	Formulate and revise scientific explanations and models using logic and evidence.
1, 2, 3	**12.2.1.e**	Recognize and analyze alternative explanations and models.
1, 2, 3	**12.2.1.f**	Communicate and defend a scientific argument.
1, 3	**12.4.1.a**	Investigate and describe the form and function of subcellular structures that regulate cell activities.
3	**12.4.1.b**	Investigate and describe cell functions (e.g. photosynthesis, respiration, cell division).
3	**12.4.1.c**	Investigate and understand that complex multicellular organisms are formed as highly organized arrangements of differentiated cells.
2, 3	**12.6.1.a**	Propose designs and choose between alternative solutions of a problem.
2, 3	**12.6.1.b**	Implement the selected solution.
2, 3	**12.6.1.c**	Evaluate the solution and its consequences.
2, 3	**12.6.1.d**	Communicate the problem, process, and solution.

1, 2, 3	**12.6.2.a**	Explain how science advances with the introduction of new technology.
3	**12.6.2.b**	Understand creativity, imagination, and a good knowledge base are all needed to advance the work of science and engineering.
1, 4	**12.6.2.c**	Contrast the reasons for the pursuit of science and the pursuit of technology.
3	**12.7.1.b**	Investigate and explain how diseases are prevented, controlled, and cured.
4	**12.7.6.b**	Investigate and understand that social issues and challenges may affect advancements in science and technology.
3	**12.8.1.c**	Recognize science as one way of answering questions and explaining the natural world.
2, 3	**12.8.2.b**	Create scientific explanations consistent with experimental and observational evidence; make accurate predictions; strive to be logical; respect the rules of evidence; accept criticism; report methods and procedures; and make knowledge public.
3	**12.8.2.c**	Understand that all scientific knowledge is, in principle, subject to change as new evidence becomes available.
3	**12.8.3.b**	Understand that changes in scientific knowledge evolve over time and almost always build on earlier knowledge.
1, 3, 4	**12.8.3.c**	Understand that some advancements in science and technology have long-lasting effects on society.
Nebraska Mathematics Standards – Grades 9 - 12		
Lesson	**Standard**	**Description**
1	**12.1.2**	Express the equivalent forms of numbers using exponents, radicals, scientific notation, absolute values, fractions, decimals, and percents.
1	**12.2.1**	Solve theoretical and applied problems using numbers in equivalent forms, radicals, exponents, scientific notation, absolute values, fractions, decimals, and percents, ratios and proportions, order of operations, and properties of real numbers.
1	**12.2.3**	Perform estimations and computations of real numbers mentally, with paper and pencil, and with technology.
1, 2	**12.3.1**	Select and use measuring units, tools, and/or technology and explain the degree of accuracy and precision of measurements.
1	**12.4.2.b**	Create scale models.

1	**12.5.1**	Select a sampling technique to gather data, analyze the resulting data, and make inferences.
1	**12.6.2**	Solve problems involving equations and inequalities.
1	**12.6.4.d**	Represent a problem in multiple formats (words, graphs, and symbols).
Nebraska Reading / Writing Standards – Grade 12		
Lesson	**Standard**	**Example Indicator**
3, 4	**12.1.1.a**	Read selections to develop and answer literal, inferential/interpretive, and critical questions.
All lessons	**12.1.1.b**	Interpret information from graphs, charts, and diagrams, such as maps, blueprints, or schematics.
3, 4	**12.1.1.c**	Answer literal, inferential/interpretive, and critical questions.
2, 3	**12.1.2.b**	Use electronic resources (CD-ROM, software, online resources, and multimedia presentation tools).
3, 4	**12.1.6.b**	Analyze who, what, when, where, how, why, what if questions to interpret nonfiction text.
All lessons	**12.1.6.c**	Analyze information from charts, maps, and graphs.
3, 4	**12.2.1**	Write using standard English (conventions) for sentence structure, usage, punctuation, capitalization, and spelling.
3, 4	**12.2.2.d**	Write narrative, descriptive, and/or expository compositions.
3, 4	**12.2.4.a**	Develop narrative, persuasive, descriptive, technical, and/or expository writing for a designated audience and purpose.
3, 4	**12.2.4.b**	Write to describe, explain, persuade, inform, and/or entertain.
All lessons	**12.3.1.a**	Participate in and lead group discussions.
All lessons	**12.3.1.b**	Evaluate and monitor self and peer participation in group discussions.
National Health Education Standards – Grades 9 – 12: cited from pre-publication document of National Health Education Standards, Pre K-12, American Cancer Society, December 21005 – August 2006		
Lesson	**Standard**	**Description**
3	**3.12.1**	Evaluate the validity of health information, products, and services.